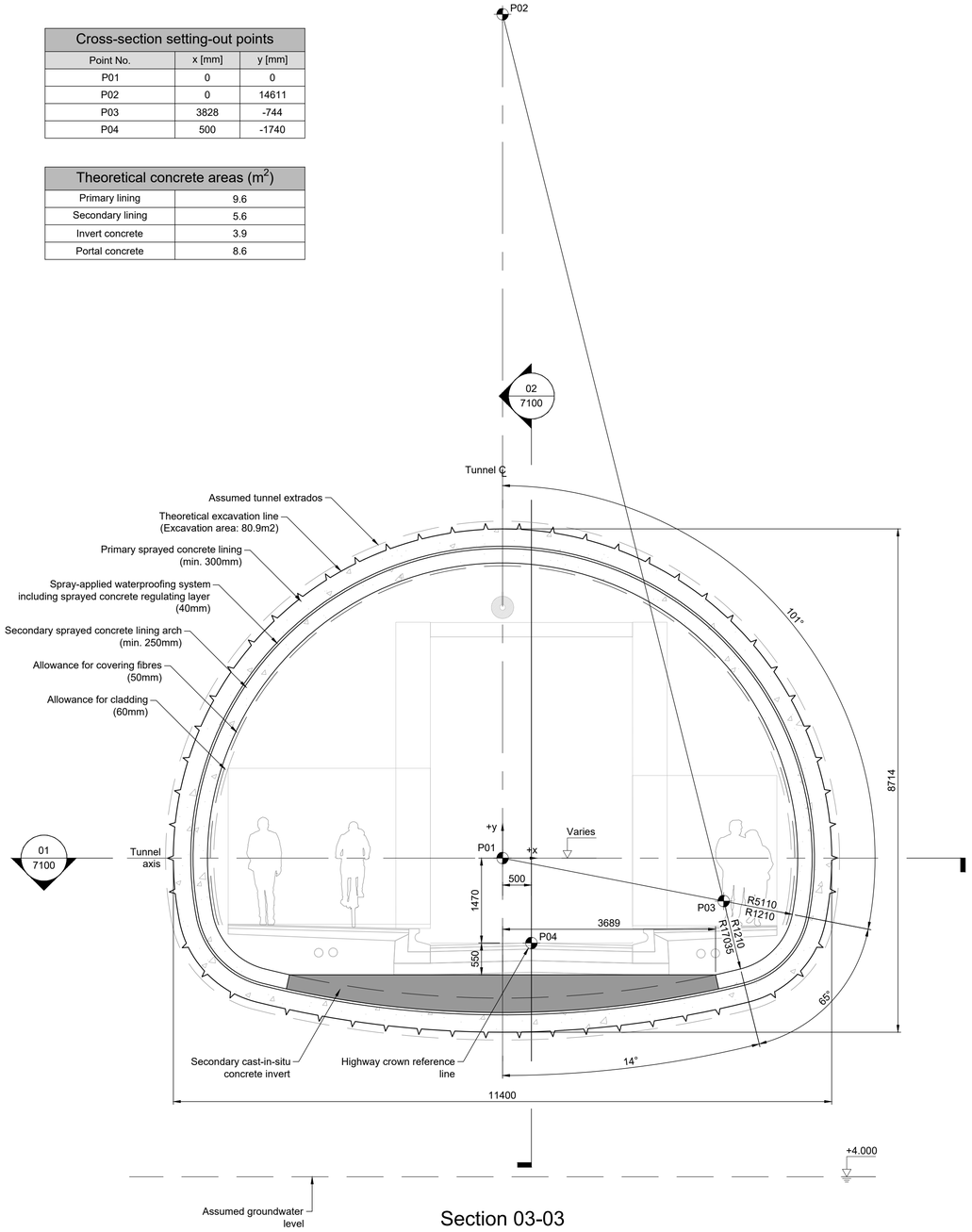
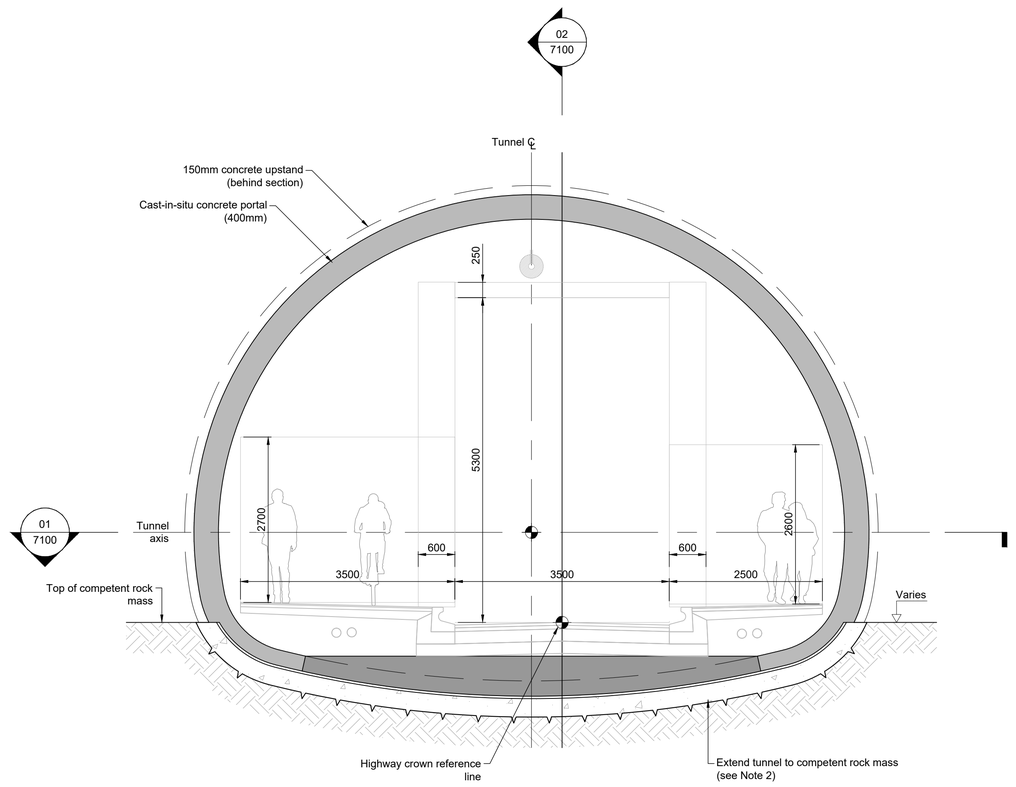
Cross-section setting-out points		
Point No.	x [mm]	y [mm]
P01	0	0
P02	0	14611
P03	3828	-744
P04	500	-1740

Theoretical concrete areas (m^2)	
Primary lining	9.6
Secondary lining	5.6
Invert concrete	3.9
Portal concrete	8.6



Section 03-03



Section 04-04
(Setting-out as Section 03-03)

PROPOSED CONSTRUCTION TOLERANCES AND ALLOWANCES FOR DEFORMATION:

Primary Lining		Secondary Lining		Total (mm)[3]
Construction Tolerance (mm)[1]	Deformation Allowance (mm)	Construction Tolerance (mm)[2]	Deformation Allowance (mm)	
75	10	50	0	135

[1] Construction tolerance assumed for primary SCL.

[2] Construction tolerance assumed for secondary SCL.

[3] Proposed total of construction tolerances and allowances for deformation. The 'assumed tunnel extrados' shown on drawings is the 'theoretical excavation line' offset by this proposed total. The actual tunnel excavation shall be on or beyond the 'assumed tunnel extrados'.

SETTING-OUT:

1. Dimensions shall not be scaled from drawings.
2. All dimensions are in millimetres unless noted otherwise.
3. Coordinates are given to Ordnance Survey (OS) grid.
4. All levels are in metres and relate to OS height datum at Newlyn.
5. Dimensions shown on drawings do not include construction tolerances nor allowances for deformation of ground and primary lining. Dimensions relate to the theoretical intrados of the secondary concrete lining in the final condition.
6. The tunnel cross-section is symmetrical about the centreline.
7. The tunnel cross-section shall be set-out perpendicular to the tunnel axis.
8. Thicknesses of primary and secondary linings are minimum. The contractor shall consider tolerances for the construction of each lining.

1m 0 1m 2m 3m 4m 5m
SCALE 1:50

RESIDUAL HAZARD	SUGGESTED CONTROL MEASURE
SIGNIFICANT RESIDUAL HAZARDS	

NOTE: The above hazards do not include every hazard or assumption, but identify significant residual construction hazards that are not likely to be obvious to a competent contractor and those that could be difficult to manage effectively. Refer also to the designer's risk documentation.

Dr. SAUER & PARTNERS

DO NOT SCALE FROM THIS DRAWING

NOTES

1. FOR TUNNELLING SPECIFIC NOTES REFER TO DRAWING BRT-TG-XX-TU-DR-TU-7001.
2. REMOVE ALL DEBRIS AND INCOMPETENT ROCK AND EXTEND THE PRIMARY SPRAYED CONCRETE LINING TO THE COMPETENT ROCK MASS. THICKEN THE LINING AS NECESSARY.
3. THIS DRAWING CONTAINS THE FOLLOWING REFERENCES:
A120036_A1_Drawing_Border
BRT-TG-XX-ZZ-M2-HI-0121
BRT-TG-XX-ZZ-M2-TU-7100

REV.	BY	CHK'D	APP'D	DATE	DESCRIPTION
P04	LCH	AFE	---	09/04/21	UPDATES TO SUIT KCC COMMENTS
P03	LCH	AFE	---	11/03/21	FOR STAGE APPROVAL
P02	LCH	AFE	---	17/02/21	KCC, BB AND CAT3 CHECK COMMENTS CONSIDERED
P01	LCH	AFE	---	04/01/21	FIRST ISSUE

CODE	DRAWING STATUS
S4	FOR STAGE APPROVAL

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TUNNEL AND HIGHWAY
DETAILED DESIGN

TUNNELS
GENERAL ARRANGEMENT
CROSS-SECTIONS

SHEET 1 OF 1

DRAWING. No.
BRT-TG-XX-TU-DR-TU-7101

DRAWN : LCH	DESIGNED : AFE	REVISION
SCALE : 1:50	ORIGINAL SIZE : A1	P04